

## ACCESS SERVICE

## 16. Public Packet Data Network

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## 16.1 Frame Relay Service

## 16.1.1 General

## (A) General

Frame Relay Service (FRS) is a medium-speed, connection-oriented packet-switched data service that allows for the interconnection of Local Area Networks (LANs) or other compatible end user customer premises equipment. The terminal equipment accumulates the customer data and puts it into a frame relay format suitable for transmission over the FRS network.

FRS permits customers to share network bandwidth for data transmissions.

Rates and charges for FRS are set forth in Section 17.4.7.1 following. The application of rates for FRS is described in Section 16.1.2 following.

In addition to the regulations and charges specified in this section, the general regulations and charges specified in other sections of this tariff apply as appropriate.

## (B) Service Description

FRS is a transport service that facilitates the exchange of variable length information units (frames) between customer connections. Frames travel a fixed path through the network with an address that specifies the permanent virtual connection. Addresses are read by the network processor, and the frames are relayed to the preassigned destination.

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## 16. Public Packet Data Network (Cont'd)

## 16.1 Frame Relay Service (Cont'd)

## 16.1.1 General (Cont'd)

## (B) Service Description (Cont'd)

The service includes: the Access Point Link, the Frame Relay Service Port, the Virtual Link, which has associated Committed Information Rates (CIRs), and the Network Link. A special access facility (ordered out of Section 7.6 or 7.7 preceding) is used to connect to the frame relay service from a user's premise.

The Access Point Link (APL) is the physical entry point that connects a user's special access channel to the Frame Relay Service network. The APL utilizes speeds of 56/64 Kbps, 128 Kbps, 256 Kbps, 384 Kbps, 512 Kbps, or 768 Kbps, and must be ordered at a bit rate equal to the Frame Relay Service Port (except that no APL is required for a Frame Relay Service Port speed of 1.536 Kbps).

The Frame Relay Service Port (FRS PORT) connection permits FRS compatible end user customer premises equipment (CPE) to originate or terminate an interstate access service. Connections between end user customer premises equipment and the telephone company frame relay switch are available at speeds of 56 Kbps, 64 Kbps, 128 Kbps, 256 Kbps, 384 Kbps, 512 Kbps, 768 Kbps, and 1.536 Mbps. Each FRS Port connection requires the identification of a corresponding terminating port connection(s).

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## 16. Public Packet Data Network (Cont'd)

## 16.1 Frame Relay Service (Cont'd)

## 16.1.1 General (Cont'd)

## (B) Service Description (Cont'd)

The Virtual Link (VL) is a permanent virtual circuit that connects one FRS Port to another. The VL utilizes various speed categories of 56/64 Kbps, 128 Kbps, 256 Kbps, 384 Kbps, 512 Kbps, 768 Kbps, and 1.536 Mbps. The VL must be associated with two FRS Ports, or an FRS Port and NL, and must be ordered at a bit rate equal to the lower of the associated FRS Port or NL. One or a multiple of Vls can be associated with one FRS Port or NL. Vls are independent of FRS Ports and NLs and can have different customers as controllers. The Virtual Link is charged a nonrecurring and recurring rate for connection to the FRS Port or NL. At the time service is ordered the number of Vls will be identified along with their Committed Information Rates. CIRs are the bit rates at which the FRS network commits to transfer data. Committed Information Rates provide for frame relay switch throughput at designated speeds (See 16.1.2 (A) (3) following.) This information is required for network routing purposes.

The Network Link (NL) is the interexchange facility connecting a Company customer in one exchange to the frame relay service in another Company exchange. The NL utilizes the same speeds as the Virtual Link and must be ordered at a bit rate equal to or greater than the highest rate of the VL. The NL is non-mileage sensitive.

Connections between a user and the Frame Relay Service are provided via Channel Terminations (see Section 7.6 and 7.7, Special Access Digital Data and High Capacity Services preceding). All regulations, rates and charges as specified in Section 17.3.4 and Section 17.3.5 will apply in addition to the rates and charges associated with FRS.

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## 16. Public Packet Data Network (Cont'd)

## 16.1 Frame Relay Service (Cont'd)

## 16.1.1 General (Cont'd)

## (C) Ordering Options and Conditions

Frame Relay Service is ordered under the Access Order provisions set forth in Section 5 preceding. Also included in that section are other charges which may be associated with ordering FRS (e.g., Service Data Change Charges, Cancellation Charges, etc.) Specific rates for these charges are set forth in Section 17.4 following.

A minimum of two FRS Port connections are required for data to be transported between customer designated premises.

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## 16. Public Packet Data Network (Cont'd)

## 16.1 Frame Relay Service (Cont'd)

## 16.1.1 General (Cont'd)

## (C) Ordering Options and Conditions (Cont'd)

When placing an order for FRS the customer must specify:

- the number of Virtual Links (VLs) required;
- the location of the ports for each VL;
- the Committed Information Rates (CIRs) that will be associated with each VL;
- that the traffic consists of more than ten percent interstate traffic.

The FRS Port connecting the special access facility to the Company frame relay switch must be ordered and provided at the same speed as the special access facility.

When connecting to the port of another customer, the ordering customer must obtain authorization from the other customer.

## (D) Acceptance Testing

At no additional charge, the Company will, at the customer's request, cooperatively test at the time of installation.

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## 16. Public Packet Data Network (Cont'd)

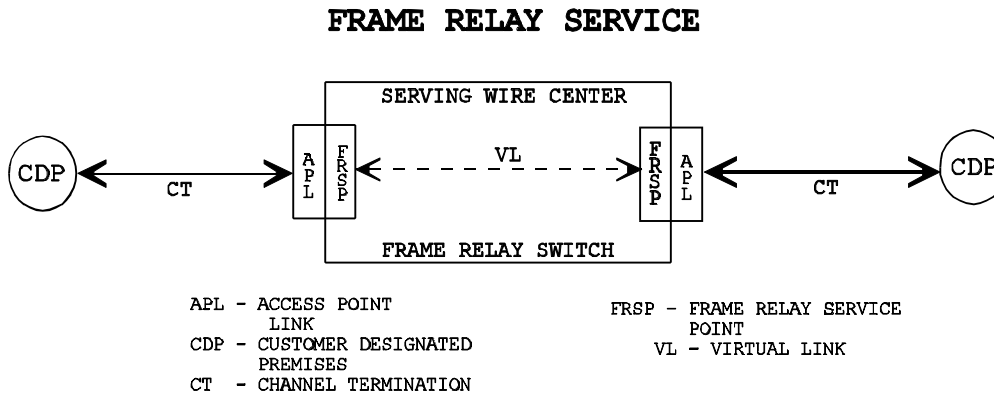
## 16.1 Frame Relay Service (Cont'd)

## 16.1.2 Rate Regulations

This section contains the specific regulations governing the rates and charges that apply for Frame Relay Service.

## (A) Rate Categories

The following diagrams depict a generic view of the components of FRS and the manner in which the components are combined to provide Frame Relay Service and Interconnected Frame Relay Service.



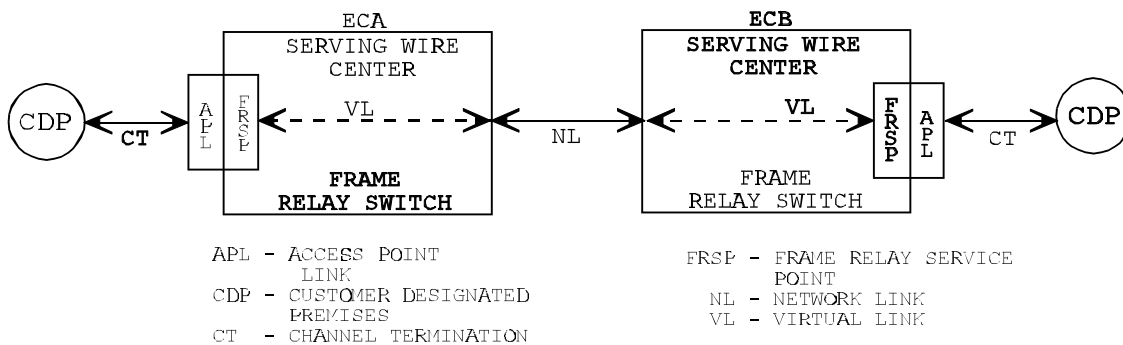
## ACCESS SERVICE

## 16. Public Packet Data Network (Cont'd)

## 16.1 Frame Relay Service (Cont'd)

## 16.1.2 Rate Regulations (Cont'd)

## (A) Rate Categories (Cont'd)

**INTERCONNECTED  
FRAME RELAY SERVICE**

Frame Relay Service is available within all Company exchanges. It may be terminated to the frame relay services of another provider to the extent that technical compatibility and suitable service arrangements between the Company and the other provider are maintained.

## (1) Access Point Link

The Access Point Link (APL) is the physical entry point that connects a user's special access channel to the Frame Relay Service network. The APL utilizes speeds of 56/64 Kbps, 128 Kbps, 256 Kbps, 384 Kbps, 512 Kbps, or 768 Kbps, and must be ordered at a bit rate equal to the Frame Relay Service Port (except that no APL is required for a Frame Relay Service Port speed of 1.536 Kbps).

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## 16. Public Packet Data Network (Cont'd)

## 16.1 Frame Relay Service (Cont'd)

## 16.1.2 Rate Regulations (Cont'd)

## (A) Rate Categories (Cont'd)

## (2) FRS Port

The FRS Port is the physical location in the Company switching office where the special access facility of the customer connects to the FRS Network. It receives the data frame from the end user customer's Local Area Network or other compatible CPE device and verifies that the end user connection and the corresponding access customer connection are valid before relaying the frame to the destination end point.

The FRS Port consists of either a 56 Kbps, 64 Kbps, 128 Kbps, 256 Kbps, 384 Kbps, 512 Kbps, 768 Kbps, or a 1.544 Mbps port interface connection. The port connecting the special access facility to the Company frame relay switch must be ordered and provided at the same speed as the special access facility.

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## 16. Public Packet Data Network (Cont'd)

## 16.1 Frame Relay Service (Cont'd)

## 16.1.2 Rate Regulations (Cont'd)

## (A) Rate Categories (Cont'd)

## (3) Virtual Link (VL)

A VL is a software defined communications path between two port connections or a port and a network link within the FRS network.

Each VL is provisioned with a customer selected Committed Information Rate. The CIR is a transmission speed specified by the customer. CIRs range from 8 kbps to 768 kbps. The Company will provide switch capacity to permit the customer to transmit information with guaranteed delivery at the specified CIR. The Company will permit customers to attempt to transmit at speeds up to two times the CIR with no guarantee of completion. Attempted transmissions at above two times the CIR will not be permitted.

Customers will be permitted to order multiple Vls on a given port subject to switch limitations. Customers anticipating non-simultaneous transmission may order CIRs assigned to these multiple VLs, the sum of which may theoretically exceed the actual throughput of the port. However, when simultaneous transmission of multiple Vls occurs, the total of the transmission rate (CIRs) may not exceed the actual throughput of the port.

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## 16. Public Packet Data Network (Cont'd)

## 16.1 Frame Relay Service (Cont'd)

## 16.1.2 Rate Regulations (Cont'd)

## (A) Rate Categories (Cont'd)

## (4) Network Link (NL)

The Network Link (NL) is the interexchange facility connecting a customer in one exchange to the frame relay service in another exchange. The NL utilizes the same speeds as the Virtual Link and must be ordered at a bit rate equal to or greater than the highest rate of the VL. The NL is non-mileage sensitive and establishes an interexchange communications path between the FRS Port on the Company frame relay switch and the frame relay switch in another Company exchange.

## (B) Types of Rates and Charges

There are two types of rates and charges. They are monthly rates and nonrecurring charges. The rates and charges are described as follows:

## (1) Monthly Rates

Monthly rates are recurring rates that apply each month or fraction thereof that a FRS is provided. For billing purposes, each month is considered to have 30 days.

## (2) Nonrecurring Charges

Nonrecurring charges are one-time charges that apply for specific work activity (i.e., installation or change to an existing service). The types of nonrecurring charges that apply for FRS are: installation of service and service rearrangements. These charges are in addition to the Access Order Charge as specified in 17.4.1 following:

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## 16. Public Packet Data Network (Cont'd)

## 16.1 Frame Relay Service (Cont'd)

## 16.1.2 Rate Regulations (Cont'd)

## (B) Types of Rates and Charges (Cont'd)

## (2) Nonrecurring Charges (Cont'd)

## (a) Installation of Service

Nonrecurring charges apply for the installation of VLs.

## (b) Service Rearrangements

Service Rearrangements are changes to existing (installed) services.

A VL Rearrangement Charge will be applied whenever a change is made to the CIR of an existing VL after initial port installation and/or a change is made to the termination port destination of the VL. This change is equal to the VL installation charge.

Administrative changes will be made without charge(s) to the customer. Administrative changes are as follows:

- Change of customer name,
- Change of customer or customer's end user premises address when the change of address is not a result of physical relocation of equipment,
- Change in billing data (name, address,, or contact name or telephone number),
- Change of agency authorization,
- Change of customer circuit identification,
- Change of billing account number,
- Change of customer or customer's end user contract name or telephone number, and
- Change of jurisdiction.

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## 16. Public Packet Data Network (Cont'd)

## 16.1 Frame Relay Service (Cont'd)

## 16.1.2 Rate Regulations (Cont'd)

## (B) Types of Rates and Charges (Cont'd)

## (2) Nonrecurring Charges (Cont'd)

## (c) Minimum Period

The minimum period for FRS is one month and the full monthly rate will apply to the first month. Adjustments for quantities of services established or discontinued in any billing period beyond the minimum period are as set forth in Section 2.4.1 (F). The minimum period for the Frame Relay Service 1.544 Mbps port are as set forth in Section 2.4.2 and Section 5.5.1.

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